CLAIMS

1. (Currently amended) A method for enhancing the generation of hydroxyl radicals (OH*) in a liquid aqueous biocidal mixtures containing hydrogen peroxide (H_2O_2) wherein the hydrogen peroxide has an initial concentration of from 2 to 250 ppm, comprising
   i) supplying oxygen (O_2) to said mixture;
   ii) supplying suspended magnesium oxide to said mixture as an alkaline earth metal catalyst wherein the magnesium oxide (MgO) is supplied to the mixture to a concentration of from 2 ppm to 250 ppm;
   iii) irradiating said mixture with UV light; thereby providing a synergic combination of UV, H_2O_2, O_2, and MgO in suspension; and
   iv) mixing said mixture at ambient temperature;
   and wherein the generated hydroxyl radicals are accumulated in said mixture to reach a desired amount and are quantified by reacting them with salicylic acid.

2. (Canceled)

3. (Canceled)

4. (Original) The method of claim 1, wherein the oxygen is supplied by injecting air or oxygen into the mixture.

5. (Original) The method of claim 1, wherein the oxygen is supplied to saturation.

6. (Original) The method of claim 1, wherein said UV light has wavelength of from 190 to 390 nm.

7. (Canceled)

8. (Previously presented) The method of claim 1, wherein the initial concentration of hydrogen peroxide is from 10 to 50 ppm, and the initial concentration of magnesium oxide is from 10 to 50 ppm.

9. (Previously presented) The method of claim 1, wherein the pH of said mixture has a value of from 5 to 10.

10. (Original) The method of claim 9, wherein said pH has a value of 7.2 to 9.7.

11. (Previously presented) The method of claim 1, wherein said mixing is carried out for a period of time sufficient to generate the desired amount of hydroxyl radicals.

12. (Previously presented) The method of claim 11, wherein said desired amount of hydroxyl radicals is an amount sufficient to reach a required biocidal effect in the mixture.

13. (Original) The method of claim 11, wherein said period lasts from 3 seconds to 5 hours.

14. (Original) The method of claim 13, wherein said period lasts from 30 second to 100 minutes.

15. (Original) The method of claim 11, wherein said period lasts more than 5 hours.

16. (Previously presented) The method of claim 11, wherein said desired amount of hydroxyl radicals is a predetermined quantity.

17. (Canceled)

18. (Canceled)